

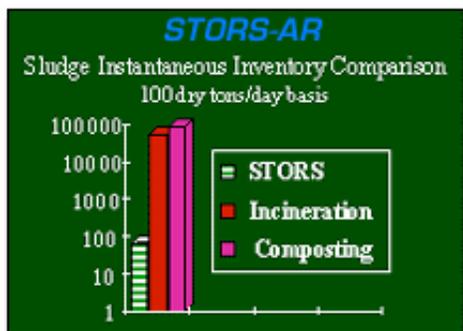
The Sludge-To-Oil Reactor Systems (STORS) is a sludge and wet biomass treatment process that, when combined with the Ammonia Recovery Process (ARP), greatly reduces the regulatory, physical and financial hurdles of building and operating advanced municipal wastewater treatment facilities.

Some of the STORS/ARP process benefits over conventional wastewater treatment methods include:

- **Onsite Conversion of Sludge to High Energy Fuels**
- **Doubles Nitrogen Removal Efficiency**
- **Up to 1,000 Times Smaller Footprint**
- **Equally Effective as Retrofit or New Construction**
- **Significantly Reduces Overall Disposal Costs**

The STORS/ARP process does not vaporize the water in the sludge (as does incineration, pelletization, etc.), but chemically converts sludge organics into oil.

The STORS/ARP Revolutionary New Concept



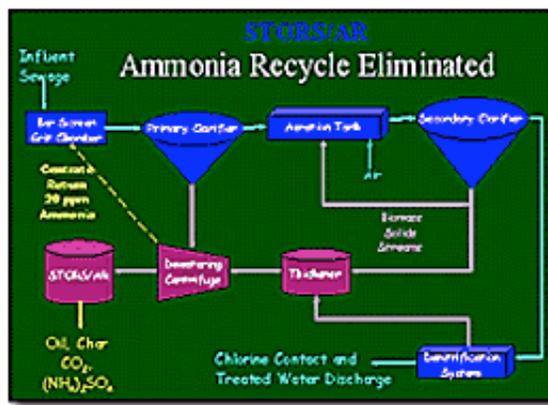
Dewatered raw, digested or waste activated sludge is processed through a hydrothermal reactor where it is converted into a high-energy fuel in the form of oil or char (the system can be configured to produce whichever fuel has the greatest value within the current market). In addition, some carbon dioxide is formed and discharged along with the excess water. The char, or "Bio-fuel", is

one-tenth the volume of the original dewatered sludge and with a fuel value of a medium grad coal (between 5,000 and 10,000 Btu per pound), can be sold to a number of industries as a power source. It can also be used on site to generate electricity to run the facility or sold to the local grid. The oil has 90% of the heating value of diesel fuel and is sent to an off-site user refinery. The carbon dioxide gas is de-odorized and vented. The STORS derived wastewater,

along with the centrate stream coming from the dewatering process, is sent to the Ammonia Recovery Process (see Ammonia Recovery Process heading for detailed description) where the nitrogen, in the form of ammonia, is converted into one of three saleable commodities- ammonium sulfate, ammonium phosphate or liquid ammonia - depending on local regulations, and/or whichever product represents the best commercial value for that geographical location.

Small Size - Easy Fit

The STORS/ARP is a component system that can be readily integrated into existing wastewater treatment facilities, freeing up space once used for sludge digestion, storage or staging area for loading on vehicles for off-site disposal. A key factor for large urban areas where additional capacity expansion is desired but the space required by conventional process methods is simply not available. In addition, by installing a STORS / ARP retrofit, many municipal wastewater plant operators can actually realize up to a 30% increase in plant capacity by eliminating the ammonia recycle.



STORS/ARP Process Economics

It has long been said that there are only two drivers in the municipal wastewater industry: compliance and cost. Aside from being the best available technology for achieving or exceeding local, state and federal regulatory mandates, the STORS/ARP process will in most cases, significantly reduce the overall cost of operating a wastewater treatment plant.

As a retro-fit, the STORS/ARP process significantly increases both the available space and process capacity of existing wastewater treatment plants.

ThermoEnergy's goal is three-fold: To achieve "zero discharge" status for municipal wastewater facilities, and to greatly reduce and stabilize the cost of wastewater processing and enhance our nation's energy independence goals. The STORS / ARP process makes this goal a reality.



R & D 100 Award Winner

STORS Large-Scale Demonstration Project

ThermoEnergy Corporation designed, built and successfully operated a five million gallon per day (5 mgd) STORS facility at the Colton, California Wastewater Treatment Plant during 2000. This plant, larger than 75% of municipal wastewater plants in the United States, was operated in conjunction with the Company's ARP process (see Municipal/Agricultural Wastewater

Treatment Systems page). This plant successfully converted raw, digested and waste-activated sludge into a high-energy fuel and ammonium sulfate crystals (fertilizer). This new state-of-the-art facility represents the future in wastewater treatment facilities.

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